UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/363,823	07/30/1999	KAZUHIRO NAKATA	862.2957	8593

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EXAMINER
LAMB, TWYLER MARIE

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 03/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ___3___ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jul 30, 1999* .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-16* is/are pending in the application.

   4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-16* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

   a)☒ All b)☐ Some* c)☐ None of:

   1. ☒ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _3_

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers

have been placed of record in the file.

Specification

2.   The abstract of the disclosure is objected to because the form or legal phraseology

"discloses" is used in the abstract. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

4.   Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Oda (US

5,838,888).

In regards to claims 1 and 2, Oda discloses a data processing apparatus and method

(Figure 5, printer 7, col 3, lines 26-27) for processing data stored in a print buffer (Figure 5, print

buffer 18) in an image printing apparatus (Figure 5, printer 7) subjected to time-division drive (col 3, line 64 - col 4, line 8), comprising the step of: rearranging the data in such a manner that one or more address regions in the print buffer are occupied with one word of data (which reads on receiving the data in a serial format and converting it to a parallel format and the data being provided in a data storage table and the table being divided into data areas of 8 bits, which according to the specification page 7, lines 17-19 represents one word) (col 3, line 64 - col 4, line 11; Figures 9B and 9C, col 4, lines 59-61) corresponding to a plurality of contiguous print elements provided on a printhead of the image printing apparatus (which reads on distributing the print data for each dot to the corresponding channels of the printing elements) (col 1, lines 26-30; col 5, lines 12-21).

In regards to claim 3, Oda also discloses comprising: first storage means for storing data of a plurality of words (which reads on the data being provided in a data storage table formed on the print buffer in a matrix form) (Figures 9B-9C, col ; 4, lines 53-59) and delay means for delaying an amount of data that corresponds to a whole-number multiple of a number of time divisions employed in time-division drive, said delayed data being from the data that has been read out of said first storage means ({printing clock}, col 5, lines 10-26).

In regards to claim 4, Oda also discloses wherein storage means for a horizontal-to-vertical conversion is used as said first storage means (Figure 9A, col 4, lines 61-64).

In regards to claim 5, Oda discloses an image printing apparatus (Figure 5, printer 7, col 3, lines 26-27) subjected to time-division drive (col 3, line 64 - col 4, line 8) in which n represents

the number of time divisions (which reads on the different printing clock pulses) (Figure 3,

printing clock pulse, col 5, line 49 - col 6, line 23) and one word is composed of m bits (which

reads on the data being provided in a data storage table and the table being divided into data areas

of 8 bits, which according to the specification page 7, lines 17-19 represents one word) (Figures

9B and 9C, col 4, lines 59-61), comprising: data processing means for storing contiguous 1-bit

data (where the lowest common multiple of n and m is 1) in one row within a print buffer, said

data being from data output by driving the apparatus one time (which reads on receiving the data

in a serial format and converting it to a parallel format to the print buffer circuits, and the data

being provided in a data storage table and the table being divided into data areas of 8 bits, which

according to the specification page 7, lines 17-19 represents one word) (col 3, line 64 - col 4, line

11; Figures 9B and 9C, col 4, lines 59-61); wherein n-bit data corresponding to n-number of

contiguous nozzles serves as one unit (which reads on the number of bits of data corresponding to

the channels of the printing elements) (col 1, lines 26-30; col 5, lines 12-21)

In regards to claim 6, Oda discloses an image printing apparatus (Figure 5, printer 7, col 3,

lines 26-27) for processing data in which one word consists of eight bits (which reads on the data

being provided in a data storage table and the table being divided into data areas of 8 bits)

(Figures 9B and 9C, col 4, lines 59-61), comprising: printhead driving means (Figure 10, printing

head driver 19) for discharging ink from four contiguous nozzles of a print head at different

timings (which reads on the data bing provided to a 4-bit shift register and distributed by the 4-bit

shift register to the corresponding channel) (col 5, lines 12-26); a print buffer (Figure 10, 4-bit

shift register 52, col 5, lines 15-20) for outputting image data to said printhead driving means; and

data transfer means (Figure 10, data selector 53, col 19-21) for transferring data to said print

buffer; said data transfer means rearranging sets of 4-bit data, each set of which corresponds to

four contiguous nozzles of the printhead (which reads on the data bing provided to a 4-bit shift

register and distributed by the 4-bit shift register to the corresponding channel) (col 5, lines 12-

26), in such a manner that two sets of data are rendered contiguous (which reads on the data

being printed without a shift in position) (col 5, line 49 - col 6, line 41).

In regards to claims 7, 8 and 9, Oda discloses a computer-readable memory storing a

control program, a method of controlling an image printing apparatus and an image printing

apparatus (Figure 5, printer 7, col 3, lines 26-27) subjected to time division drive (col 3, line 64 -

col 4, line 8), comprising: storage means for storing image data (Figure 5, print buffer 18); a

printhead (Figure 5, print head 21, col 3, lines 47-54) for performing printing based upon the

image data read out of said storage means; and means for packing image data (which reads on

reading the data into the print buffer) (Figure 8, buffer controller 35, col 4, lines 46-50), which

will be printed by driving said print head one time, before the image data is transmitted to said

printhead (which reads on reading the data in to the print buffer based on a timing signal) (Figure

8, buffer controller 35, col 4, lines 40-52), the image data being packed in numbers of bits serving

as units in which data is read from and written to said storage means (which reads on data being

stored in a table divided into data areas) (Figures 9B and 9C, col 4, lines 53-61).

In regards to claims 10, 11, 13 and 16, Oda also discloses wherein the print element

comprises a nozzle to discharge ink (Figure 5, printing head 21, Figure 3, nozzles 21a, col 3, lines

51-54).

In regards to claims 12 and 14, Oda discloses a data processing method and apparatus

(Figure 5, printer 7, col 3, lines 26-27) for processing data stored in a print buffer (Figure 5, print

buffer 18) in an image printing apparatus (Figure 5, printer 7) which performs printing by causing

a printhead (Figure 5, printing head 21) to scan (col 3, lines 39-45; col 4, lines 12-22), said

printhead having a plurality of print elements arrayed at predetermined angles with respect to the

scanning direction of the printhead (col 3, lines 51-54; col 4, lines 12-15) and subjected to time-

division drive (col 3, line 64 - col 4, line 8), comprising a step of: rearranging the data in such a

manner that one or more address regions in the print buffer are occupied with one word of data

(which reads on receiving the data in a serial format and converting it to a parallel format to the

print buffer circuits, and the data being provided in a data storage table and the table being divided

into data areas of 8 bits, which according to the specification page 7, lines 17-19 represents one

word) (col 3, line 64 - col 4, line 11; Figures 9B and 9C, col 4, lines 59-61) corresponding to a

plurality of contiguous print elements provided on a printhead of the image printing apparatus

(which reads on distributing the print data for each dot to the corresponding channels of the

printing elements) (col 1, lines 26-30; col 5, lines 12-21).

In regards to claim 15, Oda also discloses comprising: first storage means for storing data

of a plurality of words (which reads on the data being provided in a data storage table with 64

rasters formed on the print buffer in a matrix form) (Figures 9B-9C, col ; 4, lines 53-59) and delay

means for delaying an amount of data that corresponds to a whole-number multiple of a number

of time divisions employed in time-division drive, said delayed data being from the data that has

been read out of said first storage means ({printing clock}, col 5, lines 10-26).

5.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Twyler Lamb whose telephone number is (703) 308-8823.

Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703) 305-4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
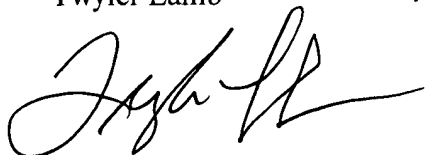
Washington, DC 20231

or faxed to:

(703) 872-9314

(for informal or draft communications, such as proposed amendments to be

discussed at an interview; please label such communications "PROPOSED" or "DRAFT")

or hand-carried to:

Crystal Park Two

2121 Crystal Drive

Arlington. VA.

Sixth Floor (Receptionist)

Twyler Lamb

MARK WALLERSON
PATENT EXAMINER

March 11, 2002